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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,391	11/08/2006	Kirsten Moschund	2590-169	9278
23117 7590 04/03/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
PATEL, VIPIN				
ART UNIT		PAPER NUMBER		
2873				
MAIL DATE		DELIVERY MODE		
04/03/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/594,391

**Applicant(s)**

MOSELUND ET AL.

**Examiner**

VIPIN M. PATEL

**Art Unit**

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date 9/27/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

1. Oath or Declaration submitted on 11/08/2006 was accepted.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claim 1, the phrase "If scaled in the submicron" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(c) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(c) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(c) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claim 1, 2 and 4-6, are rejected under 35 U.S.C. 102(c) as being anticipated by Gunn (6895148 B2)

Regarding claim 1, Gunn discloses A light phase modulator (abstract line 7-12) comprising a conducting part (column 12, Line 1-25 , method of SOI and FET) characterized by the fact that it is based on a multi-gate transistor, which if scaled in the submicron dimension is a gated-nanowire modulator.

Regarding claim 2, Gunn discloses Light phase modulator characterized by the fact that is obtained from a SOI (Column 12, Line 1-25) or a Si bulk.

Regarding claim 4 and 5, Gunn discloses Light phase modulator characterized by the fact that it has a triangular, a rectangular, a polygonal, or an ovoid shape (disk shape, claim 4).

Regarding claim 6, Gunn discloses Light phase modulator in which the conductor part is doped polycrystalline Silicon (column 6, Line 58-67).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gunn as applied to claim 1 and further in view of Ohya et al. (20030198476 A1).

Regarding claim 8 Gunn discloses optical modulator that is included as light phase modulator.

Gunn does not disclose the optical resonant cavity.

Ohya et al. discloses optical resonant cavity.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to incorporate resonant cavity of Ohya et al. with the optical modulator as per Gunn in order to obtain modulated optical signal (Abstract line 5-10

8. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunn as applied to claim 1 and further in view of Vorhaus (4315272)

Regarding claim 3, Gunn discloses light phase modulator,

Gunn does not disclose gate-all-around architecture.

Vorhaus discloses Field effect transistor with gate all around transistor.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to incorporate gate-all-around architecture of Vorhaus into the Gung in order to improve efficient multi-drain transistor.

Regarding claim 7, Gung discloses the Light phase modulator forming a capacitive (column 8, Line 36-46) configuration.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bouvet et al. (2007/0298551 A1), discloses gate-all-around devices and nano wires.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIPIN M. PATEL whose telephone number is (571)270-1742. The examiner can normally be reached on Monday through Friday, 7:30AM to 5:00PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VP

Vipin Patel

/Ricky L. Mack/  
Supervisory Patent Examiner, Art Unit 2873